

REMARKS

The new claims set forth above succinctly describe embodiments of the disclosed invention. The applicants respectfully submit that the new claims do not include new matter.

Support for new independent claim 29 is found in the specification; for example, on pages 26-29, which describe the general method by which corresponding positive and negative components of a matrix are represented by single-stranded portions of oligomers that include complementary sequences of nucleic acids or nucleic acid analogs; and on pages 30-39 describe embodiments of the invention useful for representing addition of vectors, multiplication of a vector by a scalar, obtaining the inner and outer products of two vectors, and the multiplication of a matrix and a vector. Those skilled in the art would recognize that a vector can be a matrix of one dimension, and that a matrix may be formed by a set of one or more vectors; accordingly, the recitation in new claim 29 of "[a]n analog method for evaluating an algebraic operation on a selected matrix" is appropriate, since applying the recited operation(s) to one or more vectors would necessarily result in treating one or more matrices.

New claim 30 limits the claimed method to one comprising "changing the concentration of the oligomers in the solution in response to determining that the algebra includes multiplying the matrix by a scalar," support for which is found in the specification at the bottom of page 30.

New claim 31 limits the claimed method to one comprising an analog representation of finding a product of the selected matrix with a vector, support for which is found in the specification on pages 36-39.

New claim 32 further limits the method of claim 31, reciting that the mixing enables an oligomer representing a component of a vector to hybridize to a single-stranded portion of an oligomer that represents a component of the selected matrix, support for which is found in the specification on pages 37-38.

New claim 33 further limits claim 31 to a method comprising doing an operation on the solution whose result depends on concentrations of double-stranded hybridization products formed by the mixing, support for which is found in the specification on page 39,

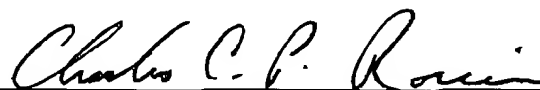
which describes combining pools of oligomers representing the changed and unchanged sign contributions to the matrix inner product, and on pages 48-49, which describe hybridizing oligomers representing the matrix inner product to a sub-stoichiometric set of oligomers, in representation of the application of a saturation function.

New claim 34 limits the method of claim 31 to one comprising determining the value of the product of the selected matrix with the vector based on concentrations of hybridized oligomers produced by the mixing, support for which is found in the specification on page 39, lines 9-13, and also on pages 43-45, which describe "reading" the output.

New claim 35 limits the claimed method to an embodiment wherein the recited matrix is a vector, which is a species of matrix.

Respectfully submitted,

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